DOCUMENT RESUME

ED 077 341 HE 004 060

TITLE	A Report on the Graduate Education Needs in the Spokane Area to the Council on Higher Education.
INSTITUTION	Washington State Council on Higher Education, Olympia, Washington.
PUB DATE	Sep 71
NOTE	95p.; Report prepared by Heald, Hobson & Associates
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Educational Needs; *Educational Objectives; *Educational Research; *Graduate Study; *Higher Education; Post Secondary Education
IDENTIFIERS	*Spokane; Washington

ABSTRACT

This document comprises a report designed to analyze graduate educational needs in the greater Spokane area. Emphasis was on four broad categories: education, government, business and public affairs. The first chapter describes the characteristics of the Spokane area, the second examines graduate education needs directly, and the third contains the conclusions of the report. Various supportive data are presented in the accompanying appendices. These include a private institution degree inventory and enrollment figures by degree programs, a listing of persons contacted during the study, and construction cost figures for a medical school. A synopsis of graduate needs in the Spokane area is under separate cover. (Author/MJM)

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A REPORT
on the
GRADUATE EDUCATION NEEDS
in the
SPOKANE AREA
to the
COUNCIL ON HIGHER EDUCATION

HE 004 060

HEALD, HOBSON & ASSOCIATES
SEPTEMBER 1971

PREFACE

On January 15, 1971, Heald, Hobson & Associates was retained by the Washington Council on Higher Education to analyze graduate educational needs in the greater Spokane area. This document comprises its report.

The study effort consisted of three basic avenues of endeavor: (1) background research review: (2) basic data gathering; and (3) assessment interviewing. During the review phase, previous studies and presentations and records of past hearings were analyzed. During the subsequent phases, basic data were gathered from statistics available in the offices of the Council on Higher Education and from interviews with officials at the colleges and universities, both public and private, in and around the Spokane area. A review and evaluation of the current status of programs was made, and an inventory of degree offerings was completed. These efforts provided a framework for an assessment of graduate education requirements in the Spokane area. Enrollment projections for the elementary and secondary systems and institutions of higher learning within the study area suggest the rate of expansion and the potential for increased demands on existing graduate programs. Because the basic economic environment of the Spokane area also has a significant effect on the need for graduate education it too was examined. Here the emphasis was on four broad categories: education, government, business and public affairs.

The report is contained in three chapters: the first describes the characteristics of the Spokane area, the second examines graduate education needs directly, and the third contains the conclusions of the report. Various supportive data are presented in the accompanying appendices. These include a private institution degree inventory and enrollment figures by degree programs in Appendix A, a listing of persons contacted during the study in Appendix B, and construction cost figures for a medical school in Appendix C.

CHAPTER ONE:

CHARACTERISTICS OF THE SPOKANE AREA

Spokane, the county seat of Spokane County and the second largest city in Washington, is the dominant community (often referred to as the "hub") of the Inland Empire. This is the appellation applied to the region embracing parts of Eastern Washington, Northern Idaho, Western Montana, and Northeastern Oregon, essentially a plateau extending south from British Columbia to Oregon's Blue Mountains and lying between the Rockies and the Cascades. The area comprises a population in excess of 1.1 million persons. The presence of mountain barriers on all sides and extensive natural resources contribute to the area's economic stability and to the cultural cohesion it enjoys.

The City of Spokane is located approximately 300 miles inland from Seattle and 15 miles west of the Idaho border. It is the largest metropolis between St. Paul-Minneapolis (1350 miles to the east) and Seattle, north of Salt Lake City (700 miles south). The city is located near the center of Spokane County, a large county comprising 1765 square miles. Spokane itself contains about 45 square miles. The urbanized portion of the county is largely concentrated within the city limits. Some urbanization has occurred in the area east of the city and in the area south and west of Geiger Field and Fairchild Air Force Base (specifically, in the communities of Medical Lake and Cheney). Most of the remainder of the county is rural.

The city began as the site of a trading post in 1810. However, it was not until after the Civil War that permanent settlers arrived and established a community there. With the arrival of the railroads, in the 1880's, it began to experience growth. Gonzaga University was established in Spokane during this decade. The end of the Nineteenth and the beginning of the Twentieth Centuries saw extensive mining activity in the area. Much of this activity has since diminished, but mining is still an important segment of the area's industrial economy. Agriculture also developed as an important element of the economy during this period; much of this centered on wheat, meat, and fruit production. With an influx of immigrants from Europe, the County population grew from 350 in 1880 to more than 140,000 in 1910.

An important stage in the area's development was realized with the construction of Grand Coulee Dam. The construction effort provided important employment opportunities, contributing to population growth (by 1940 the County population measured 165,000), but of even greater significance was the source of hydro-electric power it created. The presence of such power led to the establishment of two aluminum plants in Spokane during the Second World War. At the close of the War, the Kaiser Aluminum Corporation puchased these plants and now operates them. Presently,

the manufacture of aluminum, wood, lighting, and agricultural products comprise the greatest portions of Spokane's industrial economy. Fairchild Air Force Base, located ten miles to the west, also represents an important economic element.

The immediate Spokane area contains several institutions of higher education. One university, three four-year colleges, and one two-year college are located there. With an enrollment that exceeds 6500, Eastern Washington State College is the largest of the four-year institutions. Though not described as a university, Eastern offers a number of intermediate level (Master's Degree) graduate programs. Gonzaga University, a private institution, is second in size with a student body exceeding 2400 persons. Gonzaga is one of two institutions in Washington with a law school. The third largest area college is Whitworth College, a liberal arts institution with an enrollment of around 1700 persons. The fourth, Fort Wright College, is a girls' school. All of these institutions offer some graduate level programs. Spokane Community College offers two-year programs leading to the Associate degree. If both full and part-time enrollments are included, Spokane Community College has the largest enrollment of the five.

Other educational institutions in the Inland Empire region, outside of Spokane County, are Washington State University at

at Pullman (one of the two public universities in Washington), Central Washington State College in Ellensburg, Whitman and Walla Walla Colleges in Walla Walla, and the University of Idaho at Moscow.

Population

The Spokane area has experienced small annual population increases generally since 1910, and these have continued during the 1960's. According to the 1970 census, Spokane County's net increase during the decade of the 1960's was 9,134 persons, bringing the 1970 population to 287,487 and reflecting a 3.3 percent population increase. This is considerably below the percentage increases in population for the State as a whole (19.5 percent) and the United States generally (13.3 percent) during this same period.

While the County was experiencing slight population increases, the City of Spokane experienced a net population reduction, numbering 11,092 persons, from the 1960 population total of 181,608; this represents a 6.1 percent decrease and brings the current population to 170,000. Three of the four counties bordering Spokane County on the north, west, and east also experienced population decreases over the last ten years. Pend Oreille and Stevens Counties, located to the north and northwest of Spokane County, reflected, respectively, 12.9 and 2.7 percent decreases. Lincoln County, bordering Spokane County on

the west, experienced a 12.3 percent population decrease over this period. Of the surrounding counties, only Whitman County, containing Pullman (the site of Washington State University) realized a population increase (21.2 percent).

It is unlikely that the population growth in the Spokane area will accelerate rapidly during the 1970's. On the basis of past growth rates, the composition of industry and trade in the Spokane area, and the limited future growth potential of the agricultural and manufacturing sectors of the Spokane economy, population increases are projected to range from 0.5 to one percent annually during this decade (a one percent annual growth rate would approximately triple the rate experienced during the 1960's). If the growth rate stays in this range, by 1980 the County population will consist of some 316,000 persons.

Age Distribution

An examination of the age distribution of Spokane County residents during the 1960's indicates a decrease in numbers of persons 14 years of age and under, an increase in numbers of persons aged 15 to 24 years, a decrease in the 25 to 44 year-old age classification, and an increase in numbers of persons aged 45 years and older.

As shown on Table 1, the category containing children under five years of age decreased from 11.8 percent in 1960 to 8.0 percent in 1970. This may indicate an emigration of families

in the prime childbearing ages (20 to 40 years of age); this is somewhat substantiated by a decrease in percentages of persons in such age brackets generally (see Table 1). At the same time, there has been a substantial increase in the percentage of persons in the 15 to 24-year age category. This is attributed to the large numbers of students enrolled in the colleges and universities of the area (Cheney, the site of Eastern Washington State College, reflected a 90.8 percent increase in population during the 1960's).

The decrease in numbers of persons between ages 25 and 44 years suggests that the available labor force in Spokane County has been contracting during this period. A growth in the employed labor force (97,800 persons in 1960 to 112,300 in 1970) can be explained in part by the larger percentage of persons in the 45 years and older classification, many of whom are employed, and by the increased number of women who have assumed the status of second wage earners in the family. With respect to the former, the 45 years and older category increased 24 percent during the decade. The largest percentage increase occurred in the group aged 55 to 64 years and in the group aged 75 years and older.

Given these elements, it seems evident that Spokane is not a "youthful" community: the emphasis in the population age distribution appears to be shifting from the more youthful to the more mature age categories. The prime labor force, consisting

TABLE I

AGE DISTRIBUTION
SPOKANE COUNTY

Age Category	1960 Total Number	1960 Percentage of Population	1970 Total Number	1970 Percentage of Population
Under 5 Years	31,453	11.5%	22,860	8.0%
5 To 14 Years	55,278	19.8%	56,259	19.6%
15 To 24 Years	37,162	13.3%	53,708	18.6%
25 To 34 Years	33,567	12.0%	32,480	11.3%
35 To 44 Years	37,196	13.4%	30,212	10.5%
45 To 54 Years	30,716	11.1%	33,083	11.5%
55 To 64 Years	22,890	8.2%	26,951	9.4%
66 To 74 Years	18,756	6.7%	18,132	6.3%
75 Years And Over	11,315	4.0%	13,802	4.8%
Total	278,333	99.6%	287,487	100.0%

Source: U.S. Department of Commerce, Bureau of Census, 1960, 1970.

of persons aged 25 to 44 years, has diminished, and, unless there is an infusion of new industry from areas outside the County, it is likely that the labor force will remain relatively constant, at more or less present levels during the 1970's.

Employment Base

Spokane is the trade and service center of the Inland Empire. Its economy was originally based on the strength of the region's agriculture, forest products, and mineral wealth, but the importance of all three has declined substantially in recent years. Employees in these three industrial segments now constitute a relatively small percentage of the total work force.

Employment generally in the Spokane area increased by 14,500 persons during the 1960's. Over this period, however, employment in one industry, agriculture, decreased by 1,000 persons (see Table 2), and in 1970 agricultural employees comprised only slightly more than two percent of the total employed work force. Employment in the non-agricultural segment of the economy increased by 15,400 persons.

When Spokane's non-agricultural wage and salary workers are classified into manufacturing and non-manufacturing categories, as on Table 3, it becomes apparent that employment in manufacturing declined by 400 persons during the 1960's. Much of this decline occurred in the "food and kindred products" and "lumber and wood products" industries. Small increases occurred in the categories

Table 4

LABOR FORCE AND EMPLOYMENT IN SPOKANE AREA
1961-1970
(Thousands)

Categories	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Civilian Labor Force	97.8	95.9	94.8	95.3	96.2	100.0	102.1	105.3	108.7	112.3
Unemployment	7.4	6.6	6.2	5.7	4.9	4.5	5.0	5.0	5.0	7.4
Employment	90.4	89.2	88.6	89.6	91.3	95.4	97.0	100.2	103.7	104.9
Agricultural	3.4	3.2	3.2	3.1	2.9	2.7	2.5	2.5	2.5	2.4
Nonagricultural	87.0	86.0	85.4	86.5	88.4	92.7	94.5	97.7	101.2	102.4
Employer, Self-Employed, Unpaid And Domestics	11.8	12.1	11.9	12.3	12.3	12.3	12.0	11.9	12.0	12.0
Wage And Salary Workers - Nonagricultural	75.2	73.9	73.5	74.2	76.1	80.4	82.5	85.8	89.2	90.5
Manufacturing	12.9	11.9	12.3	12.7	12.7	13.1	12.4	13.3	13.6	12.5
Food And Kindred Products	2.8	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.1
Lumber And Wood Products	1.4	1.5	1.6	1.5	1.5	1.3	0.9	1.0	1.1	0.9
Primary Metal Industries	3.6	3.8	4.0	4.4	4.4	4.8	4.4	4.5	4.4	3.8
Fabricated Metal Products And Machines	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.4	1.4
Other Manufacturing	4.2	3.2	3.3	3.4	3.4	3.6	3.6	4.2	4.5	4.3
Non-Manufacturing	62.3	62.0	61.2	61.5	63.4	67.3	70.1	72.5	75.6	78.0
Contract Construction	3.9	3.4	3.5	3.3	3.5	4.1	4.1	4.3	4.9	5.2
Transportation, Communication, And Utilities	8.0	7.7	7.2	7.1	7.2	7.3	7.5	7.3	7.5	7.4
Wholesale And Retail Trade	20.1	20.1	19.9	19.9	20.8	21.9	22.2	22.5	23.1	23.5
Finance, Insurance, And Real Estate	4.0	4.3	4.2	4.2	4.3	4.4	4.5	4.8	5.1	5.2
Services	12.9	12.9	12.9	13.3	13.5	14.5	15.8	17.0	17.7	18.5
Government	13.2	13.4	13.3	13.5	13.9	14.9	15.7	16.3	17.0	17.9
Miscellaneous	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3

Source: State of Washington, Employment Security Department, Research and Statistics Branch.

of "primary metals", "fabricated metal products and machines", and some other manufacturing segments (see Table 3).

The non-manufacturing segment of the Spokane economy accounted for nearly all of the growth in employment over the study period: the three areas of "retail and wholesale trade", "services", and "government" account for 90 percent of this growth. During the 1960's employment increased by 5,600 and 4,700 persons in the services and government areas, respectively, and these increases account for over 70 percent of the total employment growth.

It is not likely that Spokane will experience significant industrial growth during the 1970's. Representatives of the major manufacturing and non-manufacturing interests in Spokane express opinions substantiating this view. Any major growth that may occur will depend largely on the location of new industry in the area.

A number of highly complex factors are usually associated with the decision to locate a plant in a new area. They include such matters as proximity to raw materials, transportation, and markets, size of the labor force, presence of educational facilities and resources, adequacy and economy of power sources, tax conditions, etc. Factors relating to proximity are particularly important, and, in the case of Spokane, they weigh heavily; the city lacks geographical proximity to other major western

Table 3

CHANGES IN THE LABOR FORCE & EMPLOYMENT
IN THE SPOKANE AREA
1961-1970
(Thousands)

Categories	Increase In Labor Force And Employment 1961-1966	1966-1970	1961-1970
Civilian Labor Force	2.8	12.3	14.5
Unemployment	(2.9)1/	2.9	0
Employment			
Agriculture	(0.7)	(0.3)	(1.0)
Nonagriculture	5.0	9.5	14.5
Employer, Self-Employed, Unpaid, And Domestics	0.5	(0.3)	0.2
Wage And Salary Workers - Nonagricultural	5.2	10.1	15.3
Manufacturing	0.2	(0.6)	(0.4)
Food & Kindred Products	(0.5)	(0.2)	(0.7)
Lumber & Wood Products	(0.1)	(0.4)	(0.5)
Primary Metal Industries	1.2	(1.0)	0.2
Fabricated Metal Products & Machines	0.2	0.3	0.5
Other Manufacturing	(0.6)	0.7	0.1
Non-Manufacturing	5.0	10.7	15.7
Contract Construction	0.2	1.1	1.3
Transportation, Communication, & Utilities	(0.7)	0.1	(0.6)
Wholesale & Retail Trade	1.8	1.6	3.4
Finance, Insurance & Real Estate	0.4	0.8	1.2
Services	1.6	4.0	5.6
Government	1.7	3.0	4.7
Miscellaneous	0	0.1	0.1

1/ Parentheses represent negative number or decrease

Source: Economics Research Associates.

metropolitan areas. Manufacturers typically locate at central points in relation to their markets, all other things being equal. A location along the Washington or Oregon coast would maximize proximity to potential markets and minimize shipping costs. Hence, manufacturers are likely to locate in areas other than Spokane.

In sum, Spokane should retain its position as the wholesale, retail, and financial center of the Inland Empire. The major portion of its economic growth should continue to occur in the trade, services, and governmental employment areas. These three employment categories are also likely to increase their present 60 percent share of the total employed labor force in the Spokane area. Prospects for major industrial growth hinge primarily on the likelihood of new industry locating there. Because of Spokane's locational disadvantages, the likelihood of such growth appears slight.

STUDENT ENROLLMENT

Elementary and Secondary School Enrollment

Total public school enrollment in Spokane County increased from 54,178 to 62,212 between 1962 and 1970 (see Table 4). This represents an increase of 14.8 percent, or 1.9 percent annually. These increases were distributed over all grade categories except the first, where a more or less steady decrease from a 1962 figure of 5500 students to a 1970 figure of 5030 is apparent. The

Table 4

SPOKANE COUNTY PUBLIC SCHOOL ENROLLMENTS BY GRADE LEVEL
1962-1970

Grade	1962	1963	1964	1965	1966	1967	1968	1969	1970
1	5,500	5,453	5,308	4,934	4,999	5,368	5,291	5,263	5,030
2	4,946	4,966	4,998	4,739	4,785	4,959	5,120	5,098	5,183
3	4,954	4,707	4,866	4,900	4,776	4,780	4,988	5,173	5,186
4	4,844	4,830	4,650	4,761	4,930	4,886	4,885	5,073	5,309
5	4,726	4,707	4,759	4,616	4,799	4,959	4,961	4,988	5,185
6	4,491	4,652	4,644	4,734	4,704	4,902	5,025	5,033	5,167
7	4,379	4,369	4,638	4,681	4,773	4,832	4,952	5,138	5,182
8	4,407	4,284	4,340	4,565	4,749	4,817	4,883	5,078	5,291
9	4,516	4,433	4,462	4,566	4,871	5,055	5,086	5,181	5,371
10	4,749	4,433	4,399	4,522	4,649	5,015	5,176	5,184	5,418
11	3,650	4,459	4,329	4,436	4,414	4,592	4,936	5,103	5,063
12	3,016	3,351	4,204	4,111	4,195	4,184	4,260	4,646	4,827
Total	54,178	54,644	55,597	55,565	56,644	58,349	59,563	60,958	62,212

Source: Intermediate School District #101.

greatest increase, 60 percent, occurred in grade twelve.

Students enrolled in Spokane County private schools totaled 6821 in 1970, a decrease of 2793 students from the 1962 total (see Table 5). The decreases in this case occurred in all grades, but of particular interest are those in the eighth and ninth. A student in a private school, particularly a Catholic school, completes grades one through eight in the lower school and then transfers to a high school for the remaining four years of his education. The most logical point for his transfer to a public school, therefore, occurs between grades eight and nine, and such transfers account for a substantial proportion of the reduction in numbers of private school ninth grade students.

Total enrollment, public and private, in Spokane County schools increased from 63,792 to 69,033 during the study period (see Table 6). As mentioned earlier, Spokane's population increased at an annual rate of .3 percent during the 1960's: it is projected to grow at a rate ranging between .5 and one percent during the 1970's. Yet, while the County's population was increasing (albeit slightly) during the 1960's, the number of persons under five years of age decreased (in 1960, 31,369 persons were under age five, in 1970 they totaled 22,860, a decline of 27 percent). Moreover, Spokane has a limited population growth potential, in spite of overall population increases projected for

Table 5

SPOKANE COUNTY PRIVATE SCHOOL ENROLLMENTS BY GRADE LEVEL 1962-1970[1/]

Grade	1962	1963	1964	1965	1966	1967	1968	1970
1	889	876	851	819	793	771	596	557
2	993	968	976	891	847	728	741	557
3	901	969	928	941	857	798	709	541
4	940	876	961	873	879	805	710	708
5	932	908	860	937	855	859	764	614
6	902	872	895	832	870	788	773	646
7	869	857	867	875	821	814	757	693
8	800	852	811	861	840	768	767	714
9	696	681	681	635	722	640	604	498
10	628	643	645	631	605	632	602	458
11	560	582	646	603	598	582	648	407
12	504	519	571	582	582	581	533	428
Total	9,614	9,603	9,692	9,480	9,269	8,766	8,204	6,821

1/ 1969 data not available.

Source: Intermediate School District #101.

Table 6

SPOKANE COUNTY PUBLIC AND
PRIVATE SCHOOL ENROLLMENT
1962-1970

Year	Public Schools	Private Schools	Total
1962	54,178	9,614	63,792
1963	54,644	9,603	64,247
1964	55,597	9,692	65,289
1965	55,656	9,480	65,136
1966	56,644	9,269	65,913
1967	58,349	8,766	67,115
1968	59,563	8,204	67,767
1969	60,958	1/	1/
1970	62,212	6,821	69,033

1/ 1969 data not available.

Source: Intermediate School District #101.

the 1970's. In view of its declining birth rate, assuming that past immigration and emigration patterns will continue and that there will be no major changes in survival rates, enrollments at both the elementary and secondary levels are likely to decrease during the 1970's (see Table 7)*.

Spokane College Programs and Enrollment

It is anticipated that 2760 graduating seniors from Spokane County high schools will enroll in college in 1971 (see Table 8 for projected enrollments during the 1970's). Such estimates are based on school administrators' predictions that 55 to 58 percent of the high school seniors will continue their education into college. Precise identification of the institutional choices such students are likely to make cannot be made, although student origin characteristics may provide some general guidelines.

Students residing in Spokane, and graduating from Spokane or area high schools, constitute 15 to 20 percent of Gonzaga's enrollment. Eastern Washington State College draws 93 percent of its student population from the State generally and 59 percent from the Spokane area. Looking at those patterns differently, it may

*Attrition rates used in deriving enrollment projections were developed by the Research Department, Spokane Public Schools, and were presented in its publication, Fall Enrollment, 1970. These rates were used in this study to project enrollments for grades eight and nine only. The rates derived by the Spokane Public Schools assume an increase in eighth and ninth grade enrollments because of potential transfers from private to public schools. The enrollment projections presented on Table 7 do not differentiate between private and public school enrollments. However, it is reasonable to assume that for the County as a whole there will be some attrition between grades seven and nine.

Table 7

PROJECTED ENROLLMENT IN SPOKANE COUNTY SCHOOLS[1/]
1971-1980

Grade	Attrition Rate	Actual Enrollment 1970[1/]	School Year Beginning In September									
			1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
1	--	5,587	5,600	5,650	5,650	5,630	5,600	5,650	5,700	5,650	5,600	5,600
2	.970	5,740	5,419	5,432	5,480	5,480	5,461	5,432	5,480	5,529	5,432	5,432
3	.972	5,727	5,579	5,280	5,280	5,327	5,327	5,308	5,280	5,327	5,374	5,280
4	.984	6,017	5,635	5,491	5,183	5,196	5,242	5,242	5,223	5,196	5,242	5,288
5	.993	5,799	5,975	5,596	5,453	5,147	5,160	5,205	5,205	5,186	5,160	5,205
6	.995	5,813	5,770	5,945	5,568	5,426	5,121	5,134	5,179	5,179	5,160	5,134
7	.991	5,875	5,761	5,718	5,891	5,519	5,377	5,075	5,088	5,132	5,132	5,114
8	.990	6,005	5,816	5,703	5,660	5,832	5,463	5,323	5,024	5,037	5,081	5,081
9	.990	5,869	5,944	5,758	5,646	5,603	5,774	5,408	5,270	4,974	4,986	5,030
10	.990	5,876	5,810	5,885	5,700	5,589	5,547	5,716	5,354	5,217	4,924	4,936
11	.982	5,470	5,770	5,705	5,779	5,597	5,788	5,447	5,613	5,258	5,123	4,835
12	.918	5,255	5,021	5,297	5,237	5,305	5,138	5,313	5,000	5,153	4,827	4,703
Total			68,100	67,447	66,527	65,651	64,998	64,253	63,416	62,838	62,041	62,638

1/ Includes enrollment in both private and public schools

Source: Fall Enrollment 1970, Spokane Public Schools; U.S. Department of Commerce; Bureau of the Census; and Economics Research Associates.

Table 8

PROJECTED DEMAND FOR UNDERGRADUATE EDUCATION
GENERATED BY SPOKANE COUNTY STUDENTS
1971-1980

Year	From Grade 12	Projected Students Desiring Education At Undergraduate Level
1971	5,021	2,760
1972	5,297	2,970
1973	5,237	2,985
1974	5,305	3,020
1975	5,138	2,930
1976	5,313	3,030
1977	5,000	2,850
1978	5,153	2,940
1979	4,827	2,750
1980	4,703	2,680

Source: Economics Research Associates.

be anticipated that a given class of graduating Spokane high school seniors entering college will distribute themselves as follows:

- 50 to 60 percent will enroll in Spokane Community College;
- 25 to 30 percent will enroll at Eastern Washington State College;
- 5 to 10 percent will enter private institutions of higher education in the Spokane area; and
- 15 to 20 percent will enter colleges and universities located outside of the immediate Spokane area (this includes students entering WSU).

It is evident that the majority of Spokane high school seniors entering college choose institutions located nearby, and, accordingly, an important percentage of the undergraduate enrollments of such institutions consists of Spokane area residents. The advantage of attending a nearby college and the variety of educational programs available probably account for these distribution patterns.

With the presence of four (four-year) colleges and universities in the immediate Spokane area, it might be anticipated that extensive program duplication occurs. Some duplication at both the graduate and undergraduate program levels is evident, but this is not extensive, particularly since three of the four institutions are privately endowed and some program

duplication is a logical consequence of State efforts to provide a variety of offerings for students wishing to attend public institutions.

Multiple ("duplicate") bachelor's programs are offered in 36 discrete fields or subfields. Those in religion and theology may be substracted (four such bachelor level programs are offered by the three private institutions). Of the remainder, 27 are in "core" fields (e.g., biology, accounting, languages, history, art, etc.). Hence, program duplication in relatively exotic or specific studies at the undergraduate level is not extensive.

Undergraduate degrees are offered in 144 academic areas. Specific degree programs exceed these numbers as parallel degrees (e.g., M.A. and M.Ed., and B.A. and B.Ed.) in single disciplines are offered by particular institutions.

Graduate degrees are offered in 59 program areas at these four institutions. Except for the Juris Doctor degree in Law (offered by Gonzaga) these graduate degree programs are intermediate, leading to the Master's (usually the Master of Arts or the Master of Education). Counted separately, 70 graduate degree programs (including Gonzaga's J.D., technically a "professional" program) and 182 undergraduate degree programs are available at the combined institutions. Additional, uncounted, degree titles involving majors in particular areas are also

available (e.g., a Bachelor of Arts with a major in Planning, etc., at Eastern).

Multiple master's level degrees are available in eleven academic fields. (All of the four-year institutions offer graduate-level programs.) In eight of these cases the programs are offered at Eastern (the public institution) and one private institution. In two cases Eastern offers programs available in two private institutions. The remaining case involves master's degrees offered in theology at two private institutions but not at Eastern. Hence, as Eastern's responsibility for offering a variety of graduate programs, to ensure their availability in a public college, is recognized, much of the graduate level degree program duplication can be understood. It is evident that the degree program duplication phenomenon is not an important feature of the higher educational program offerings of institutions in the Spokane area.

A variety of degree programs is a feature of this educational complex. This is apparent as the program offerings of the institutions are examined in broad detail. The largest of the institutions, Eastern, offers seventy separate Bachelors' degrees in sixteen relatively broad subject-matter areas (Education, Social Sciences, etc.). These figures are augmented by the activites of Spokane's private institutions. Gonzaga University offers 41 degree programs, also in 16 fields of endeavor; Whitworth offers 40 programs in 16 fields, and Fort Wright offers 31 programs in

10 fields. Programs in four study areas are offered in private institutions but not in the public. These are Engineering (Gonzaga), Law (Gonzaga), Library Science (Whitworth), and Religion (all of the private institutions).

Total undergraduate enrollments (including part-time students at Spokane Community College) at the five institutions exceeds 22,500 persons. As suggested earlier, Eastern has the largest undergraduate enrollment of the four-year institutions; its figure for the 1970-71 school year was 6468. During that academic year, Gonzaga's undergraduate enrollment totaled 2178, Whitworth's equalled 1404, and Fort Wright enrolled 1404. Spokane Community College had an enrollment of 11,763 students.

Gonzaga has the largest graduate enrollment, if professional and graduate programs are combined, with a total of 349 students (Fall, 1970 Headcount figures). Eastern follows as a close second with a total of 333; Whitworth enrolls 113, and Fort Wright enrolls 25 graduate students.

In terms of graduate degrees awarded during the last four school years, Eastern leads with a total of 469. Whitworth awarded 245 Master's degrees, and Gonzaga bestowed 235 Master's degrees and 113 professional degrees; Fort Wright granted 27 Master's degrees.

The largest percentage of graduate enrollments accrues to Education programs. The four institutions offer 17 degree programs

in their Education departments, and enrollments in these departmental programs represent 48 percent of total graduate enrollments (M.Ed. degrees are also offered in several other disciplines). Gonzaga's law school, with a 1970 enrollment of 225, comprises 26 percent of the total. The next largest programs, in Business and Commerce (offered at Eastern and Gonzaga), the combined Biological Science programs (Eastern and Fort Wright), and Psychology (Eastern) account for 16 percent. Enrollments in graduate English and Journalism programs (Eastern and Gonzaga, combined total enrollment of 25), the Fine and Applied Arts (Eastern and Fort Wright, combined total enrollment of 19), the Mathematical Sciences (Eastern and Gonzaga, combined total enrollment of nine), Philosophy (Gonzaga), Chemistry (Eastern) Religion, and the Social Sciences (Eastern and Gonzaga) are not great (altogether representing about eight percent of the graduate enrollments).

These figures indicate that a varied program of graduate offerings is available to residents of the Spokane area. Study areas drawing the largest numbers of enrollments are in programs preparing students for teaching, law, and business careers. There are no programs leading to post-Master's degrees (the doctorate), and graduate programs in the highly technical fields (e.g., Engineering) are absent. Enrollments in the Physical Science graduate programs are not extensive, as is generally also the case with Social Science graduate programs. Aside from masters'

programs in physical therapy at Eastern, graduate programs in the Health Sciences are currently not available in the Spokane area.

With this profile of Spokane higher education described, attention may be directed to several particular aspects of graduate education need.

CHAPTER II

GRADUATE EDUCATION NEEDS IN THE SPOKANE AREA

A comprehensive assessment of Spokane graduate education needs by specific program categories is properly a long-range planning concern. As such, it is beyond the scope of this report. Such an analysis should involve a review of graduate education from both the student's and State's vantage points, and it should be conducted in the context of comparative graduate education program cost data, programs and enrollments at other institutions within and without the State, manpower needs and student career interests, and a series of additional complex concerns. In view of the likely employment trends of the Spokane area, and in recognition of the current program offerings and enrollment trends of area institutions, this study focuses on the graduate education needs of a sampling of major professional categories. While the sample is not entirely representative of graduate education needs generally, it is reflective of important professions in the Spokane area.

As stated earlier, Spokane should retain its position as the wholesale, retail, and financial center of the Inland Empire. Its major economic growth patterns are likely to continue in the trade, services, and governmental sectors, and these three categories are likely to account for an increasing portion of the area's total employed labor force. Employment in the manufacturing

and agricultural sectors is likely to diminish proportionately as that in the trade, services and governmental sectors increases.

The occupational or professional categories selected for examination in this study relate to these three major economic segments. They comprise the law, engineering, business, social welfare, health services, architecture, public service, and education professions. In this report, each of these is examined in terms of existing graduate education programs, the nature of their manpower needs, the demand for new or additional graduate educational programs, and needs for continuing education.

LAW

Educational Opportunities

Two educational institutions in Washington offer the Juris Doctor (JD) degree: the University of Washington (which also awards a master of laws, a PhD in law, and a master of law in librarianship) and Gonzaga University.

Gonzaga's School of Law offers both day and evening programs. The evening program, viewed as part-time, generally requires four years for completion, although a student may take an additional year. The day program, viewed as full-time, was initiated in September 1970. With a normal course load it may be completed in three years.

During the 1970-71 academic year, 26 students were enrolled

in the evening program and 93 in the day program. The School of Law accepted all qualified day applicants for this academic year. Combined, the programs can accommodate 280 students, the maximum physical capacity of the School.

Graduates from educational institutions in eastern Washington account for slightly over 40 percent of the total registered students in Gonzaga's Law School. Persons graduating from Washington universities and colleges comprise 85 percent of total law student enrollment.

As of March 16, 1971, the School had received 138 applications for the 1971-72 school year; applications were being received at the rate of four or five a day. Applications from out-of-state graduates represent 10 to 15 percent of the total.

The Gonzaga School of Law is accredited by the American Bar Association. Currently, the number of teaching professors is below the minimum required by the American Association of Law Schools, and the school has not applied to it for accreditation. The administration plans to increase the staff to 12 full-time and seven part-time professors in the next few years.

Employment in the Law Profession

There are presently 360 attorneys practicing in the Spokane area. With the exception of the larger law firms, which recruit attorneys from law schools throughout the United

States, the majority of the new attorneys in Spokane are graduates of Gonzaga. Scarcity of attorneys is not apparent, and a shortage is not forecast by resident lawyers. Rather, some foresee an abundance of attorneys, particularly with the advent of the day program (in addition to the previously existing evening program) at Gonzaga; the combined programs could graduate 280 students per year by 1975.

Demand for Graduate Education

With the degree program at Gonzaga, Spokane's graduate educational needs in Law appear sufficiently accommodated. Master's and doctoral level programs have been mentioned, but interest among members of the profession in the Spokane area appears slight, and in any event, the need for lawyers with advanced training is generally insufficient to justify graduate programs at these levels in Spokane. As mentioned previously, the University of Washington presently offers such advanced degree programs--these appear more than adequate to the needs of the State and region.

Need for Continuing Education

Attorneys in Spokane indicate a need for continuing legal education rather than additional degree-oriented graduate programs. Continuing education usually refers to relatively unstructured post-high school education, but the term can also apply to non-degree postgraduate programs and is utilized thusly herein.

With the present trend toward specialization in law, the emphasis is increasingly on remaining current in one's specialty. Interest in programs that would facilitate this endeavor appears high among Spokane attorneys. The Washington Bar Association presently conducts a continuing legal education program in Spokane. Although the Dean of the Gonzaga Law School expresses recognition of the need for continuing legal education, the School lacks the capacity to offer such programs at present. Plans call for their initiation as resources permit.

ENGINEERING

Educational Opportunities

Gonzaga University is also the only educational institution in the Spokane area with programs in engineering. It offers degrees in chemical engineering; transportation engineering; electrical engineering; engineering physics; and mechanical engineering. Fifty-two third-year students and 36 fourth-year students are currently enrolled in such programs at Gonzaga.

Washington State University awards both bachelor's and master's degrees in engineering, and it presently offers Master of Science degree programs in ten specialized engineering fields along with a PhD degree in engineering sciences. The only other PhD level engineering programs in the State are offered at the University of Washington.

Employment in Engineering

Approximately 1,100 engineers are employed in the Spokane area. The City of Spokane (employing 50), the County (employing 12), the Bureau of Mines (employing 35), and the State Department of Highways (employing 75) are among the largest public employers of engineers. Kaiser Aluminum (which employs approximately 70 engineers) and Washington Water and Power are the two largest private employers of engineers.

Civil engineers comprise 25 to 30 percent of Spokane's total engineering population. The City and County of Spokane and the State Department of Highways both employ large numbers of civil engineers. Other significant areas of engineering specialization in the Spokane area are mining and metallurgy.

At the present time, the public agencies and private firms are fully staffed and have applications on file from qualified engineers seeking employment. This has not always been the case. As recently as 1969, firms in the Spokane area were experiencing difficulty in attracting qualified persons, primarily because of a strong demand for engineers throughout the country and the relatively low salaries offered in Spokane. While it is not a major factor, some employers mention that the lack of graduate engineering education may have played a role in some engineers' decision not to locate in Spokane.

The present oversupply of engineers may be temporary. A majority of the new applicants resides in the Seattle area, a region currently experiencing a high engineer unemployment rate. Some employers feel this situation will exist for another 12 to 24 months, after which time Spokane may again experience difficulty in attracting engineers, particularly those in very specialized and technical areas, and especially if the pay scale is not substantially altered.

Representatives of public agencies anticipate a moderate increase in their engineering staff requirements during the 1970's. The additional demand is less attributable to an increase in the number of major projects than to increasing requirements for studies and tests for each project. However, if the financial resources of the agencies continue to be limited, the demand for engineers in this sector also will be limited.

The future demand for engineers in the private sector depends on anticipated work load; at the present time, significant increases are not foreseen by representatives of private firms. Several of the larger private firms derive a considerable portion of their volume from publicly funded projects, and the question of how long the present trend toward a reduction in the number of new projects on all government levels will continue is currently unanswerable. Generally, private firms anticipate limited increases in their requirements for new engineers.

Demand for Graduate Education

The consensus among the major employers of engineers in the Spokane area is that while they would like to see a graduate school of engineering established in Spokane, it would not generate sufficient interest to be justifiable. In formulating this view, employers state that graduate engineering education is highly specialized, and it would be difficult to attract a sufficient number of students within a particular area of specialization to render a program viable. Also, though graduate courses in engineering are highly technical, most of the engineering work in the Spokane area is practical. For a majority of Spokane engineers, a technically-oriented degree would be of little value. Finally, few engineering positions in Spokane require an advanced degree and financial incentives for advanced degrees are limited.

Graduate programs with some efficacy for meeting engineer's graduate education needs are those leading to advanced degrees in management, economics, and business. Many engineers, particularly project engineers, express interest in such programs. Such interest is also characteristic of military personnel, as discussed later. Presently, Eastern offers an M.S. in Business and Commerce, and Gonzaga offers the Master's of Business Administration.

Need for Continuing Education

Representatives from both the private and public employment sectors identify a need for continuing education in engineering and suggest that the engineering community would derive greater benefits from the establishment of such a program than from graduate education.

Continuing education for many Spokane engineers presently consists of attending local seminars. The Bureau of Mines pursues an active continuing education program by bringing in specialists to conduct one or two week courses, or it sends its engineers to other parts of the country to attend courses.

The School of Engineering in Gonzaga University has expressed an interest in offering continuing education courses in response to the interest of local engineers. So far, however, there has not been either a willingness to organize or participate in the development of extended programs of this nature. Hence, the need for continuing education engineering programs in Spokane remains largely undefined.

BUSINESS

Educational Opportunities

Two institutions offer advanced degrees in general business in the Spokane area. Gonzaga University, which offers a master's degree in Business Administration, presently has 20 full-time students and 43 part-time students enrolled in its

program. The majority of these students also hold full-time jobs. Eastern Washington State College has 44 students enrolled in its Master of Science in Business Administration program. Eastern, Gonzaga, and Whitworth College all have programs in business administration at the undergraduate level.

Washington State University offers both a Bachelor's degree and a Master of Business Administration degree (MBA); it awarded 140 undergraduate degrees and 20 master's degrees in Business Administration during the 1969-1970 school year.

Employment in the Business Professions

The business professions encompass wholesale and retail trade, finance, insurance, and several other more specific fields of endeavor. Approximately 20 to 25 percent of the work force in these sectors is considered managerially or technically oriented. An estimated 40 to 50 percent of these persons have undergraduate degrees; few possess advanced degrees.

With the exception of Kaiser Industries and Washington Water and Power, the largest private employer in the Spokane area, the composition of industry is such that advanced degrees are not generally required. This is particularly true with respect to the wholesale and retail trade segments. Additionally, local financial institutions do not require degrees for employment, and since these institutions generally do not

reward advanced degree holders by offering higher starting salaries, there is little monetary incentive to attain such a degree.

Many Spokane business employers state that they do not foresee significant increases in their personnel requirements during the 1970's. Two major exceptions are the American Sign and Indicator and the Columbia Lighting Company both of which anticipate some personnel needs, primarily because they are oriented to the national market; most other Spokane firms cater to essentially local and regional markets.

Major employers in retail and wholesale trade and finance do not foresee significant changes in the types of job skills required of their employees during the 1970's, nor do they anticipate major procedural or operational changes within their respective firms during this period. An exception may occur in the case of computers. The larger firms are likely to increase their use of the computer and broaden its application, but the supply of appropriately trained and experienced persons in Spokane is limited (Washington State University offers both undergraduate and graduate degree programs in Computer Science).

Demand for Graduate Education

With Gonzaga University offering a master's degree in Business Administration and Eastern Washington State College

offering a program leading to a Master of Science degree in Business, the employer consensus is that the graduate educational needs of the business community are adequately served. Since few companies require a master's degree for advancement, little incentive exists for persons in the business community to obtain an advanced degree. The low level of interest in advanced degrees is substantiated by low enrollments in advanced degree programs, even though some major employers will pay tuition and book costs. As mentioned earlier, engineers have expressed an interest in these programs, but so far their participation has not been great. This is also the case with military personnel stationed in the area.

Demand For Continuing Education

Employers in the Spokane area state that the greatest educational needs in the business fields are in vocational and continuing education and exhibit a concern for the development of these types of programs. Several mention the vocational training contributions of Spokane Community College, and most feel that the Community College has responded to the problems of the business community as they relate to vocational training.

Continuing education programs such as those offered by the American Institute of Banking are seen of greater value by most employers than graduate degree programs. Non-credit courses in real estate, finance, marketing, and computer applications,

in the employers' estimation, would bring persons into the educational system who otherwise might remain outside of it for lack of time, money, or interest. Hence, the business community's graduate education needs also appear to lie in the direction of continuing education.

SOCIAL WORK

Educational Opportunities

Undergraduate educational opportunities for the study of social work are limited in Washington. Eastern Washington State College is the only institution in the State offering a baccalaureate in Social Work. The only graduate level program in the State is offered by the University of Washington (a Master's of Social Work). Various four-year educational institutions in Spokane award Bachelor of Arts degrees in Sociology which are considered, in the absence of an undergraduate program in Social Work or Social Welfare, appropriate major courses of study for careers in social work. Gonzaga has a Master's program in Sociology.

Demand for Employment In The Field of Social Work

Approximately 400 persons are employed in the social work professions in Spokane. The State Department of Public Assistance is the largest single employer with 123 positions for social workers with the baccalaureate degree and 15 positions that require a Master of Social Work degree. Presently, only

four of the 15 positions requiring the MSW are filled. The continued vacancies are the result of a current hiring freeze. The SDPA also has six baccalaureate degree level positions vacant. The personnel director states that he could fill the six positions requiring the lesser degree immediately and the 11 positions requiring an MSW within six months if the hiring freeze were lifted.

Lakeland Village, the probation departments, the juvenile courts and Eastern Washington State Hospital are other major employers of social workers. The hospital employs 17 social workers, two of whom must have master's degrees; it presently has five baccalaureate degree positions unfilled because of the hiring freeze.

An additional 100 professionals are employed by private service agencies in the Spokane area. These agencies range in size and scope from the YWCA to the Catholic Family Service. The Catholic Family Service, which employs 12 professionals, is the largest single private employer of social workers.

The future demand for social workers appears dependent upon such factors as the state of the economy, the population growth rate, and the population age distribution. As previously mentioned, Spokane's projected growth rate is not great. With a relatively stable economy, the area is not as susceptible to drastic economic fluctuations as other regions of the State. Unfortunately, economic recessions tend to exert a negative

influence on social agency staffing. In periods of high unemployment and accompanying social unrest, the need for social workers increases but it is during those periods that state agencies generally have to reduce their hiring budgets; this results in overworked, understaffed departments trying to meet increased service needs. Because of a general statewide contraction in the economy, various positions for professional social workers in Spokane are unfilled. In the long run, however, because of Spokane's limited growth potential and comparatively stable economy, the demand for social workers should reflect only moderate increases.

Demand For Graduate Education

The profession of social work has some potential for the establishment of a graduate level program in the Spokane area.

Social workers, in comparison to other professionals, comprise a group which is highly organized and interested in the establishment of a graduate program in their area of professional interest. Social workers in Spokane conducted a study of this subject in 1968 and are presently supporting a more detailed independent study to recommend implementation of specific social work programs in Spokane. This group has expressed a strong interest in the creation of such a graduate program.

With an estimated 400 social workers in the Spokane area, the number of professionals seems sufficient to support a small

graduate program in this field. Assuming a relatively low, three to five percent participation rate, an estimated 13 to 20 students could be expected to enroll. A graduate program in social work would be also likely to attract students from other geographical areas.

Public agencies frequently have financial programs to assist staff members during their enrollment in graduate school. Several offer a stipend which allows a student to receive a percentage, ranging from 50 to 100 percent, of his annual salary during the course of his study. The student so attending graduate school agrees to return to the sponsoring agency for at least one year. The period of subsequent employment depends upon the size of the stipend.

Ability to move upward within an organization and potential increases in earning capability are additional incentives for social workers to earn graduate degrees. Unlike many of the other professions discussed, social work has positions which require an MSW degree -- the majority of the supervisory positions in the State Department of Public Assistance require an MSW or equivalent experience.

The University of Washington, which offers the only MSW program in the State, has indicated that there may be a need for the development of a second MSW program in Washington. At the present time, there are several applicants for limited

openings in the MSW program at the University of Washington: this suggests a substantial demand. Eastern Washington State College in Spokane, because of its undergraduate program, appears to be the logical center for a graduate program in social welfare. Proximity to Spokane, the second largest Washington city, would facilitate opportunities for students to gain field experience. On the basis of this preliminary survey, the offering of a graduate program in Social Work at Eastern appears sufficiently warranted to justify the more detailed feasibility study currently underway.

HEALTH SCIENCES

Educational Opportunities

Students interested in careers in the allied health sciences in the Spokane area are afforded extensive educational opportunities to pursue their interests. Two private institutions -- Whitworth and Fort Wright College -- and two public institutions -- Washington State University and Eastern Washington State College -- have combined to offer an inter-institutional undergraduate program in nursing. The program requires four academic years and one summer session to complete. It will graduate its first class in June 1971. As of December 15, 1970, 53 juniors and 36 seniors were enrolled. Projected enrollment at the Center is 200 students for the 1971-1972

school year; this should increase to 300 during the 1972-1973 school year.

All four of the area's four-year institutions offer undergraduate degrees in medical technology. Students spend three years in the educational institution before entering the study of medical technology at one of the local hospitals. The senior year is spent completing the requirements for certification by the Registry of Medical Technologists. Upon obtaining a professional certificate in medical technology, a Bachelor of Science degree in Medical Technology is awarded.

Eastern Washington State College also offers Bachelor of Science degrees in Physiotherapy, Speech Pathology and Dental Hygiene, and a Master's degree in Physiotherapy. This institution recently embarked on a new Master's of Science program in Speech Pathology.

Spokane Community College offers a number of allied health science programs at the associate degree level. The registered nursing and licensed practical nursing programs have the largest student enrollments. The registered nursing program, with an enrollment of 60, allows the student to transfer into the inter-institutional undergraduate nursing program (above) through one of the four participating institutions if qualified to do so. The licensed practical nursing program can be completed in one

year. The number of applicants for each program exceeded the number of available openings for this academic year.

Spokane Community College also offers a one-year dental assistant's program, a two-year inhalation therapy program, and a two-year program in cardio-pulmonary technology. The latter was the first of its kind in a public educational institution in the United States. A one-year medical records technology program, a two-year medical records degree program, and a one-year medical secretarial program also are offered.

Within the next five years Spokane Community College expects to offer programs for training occupational therapy aides, physiotherapy aides, medical laboratory technicians, dental laboratory technicians, and radiology technicians.

Employment In The Health Sciences

With 1,000 hospital beds contained in institutions located within a one-half-mile radius, Spokane possesses an extensive health care complex. Three hospitals -- Deaconess, St. Lukes, and Sacred Heart -- form the nucleus of this concentration of health care facilities. These three hospitals employ nearly 2,300 persons.

This concentration of health care facilities in Spokane has a regional impact. The City serves as the major medical center for the Inland Empire and draws patients from western

Montana, northeastern Oregon, and southern Canada. It is estimated that 30 percent of the patients admitted to local hospitals come from outside the Spokane area.

At the present time, the hospitals are not experiencing shortages of personnel. Increases in needs for health personnel are tied either to physical growth in facilities or to expansion of hospital services. These, in turn, are generally the result of increased public demand for health care. It is possible that the regional appeal of Spokane's medical facilities may change during the 1970's, but it is unlikely that demands on these services will diminish. The needs for allied health care personnel are likely to continue to increase during the 1970's.

Demand For Graduate Education

Graduate education in medicine involves both the subject of programs in the allied sciences and the question of a medical school for the training of physicians.

Frequently stated arguments for the development of a medical school, aside from the provision of additional physicians, center on the effects of drawing professionals into the region, the establishment of higher levels of health care in the teaching hospital, and expanded opportunities for area medical students to attend such a medical center. These benefits must be weighed against the cost factors associated with such a facility,

particularly in light of new and imaginative medical education programs that do not entail the construction of a separate medical center.

Spokane County exceeds the national average for physicians and medical specialists. The national ratio of non-federal physicians is 140 per 100,000 population; in Spokane County there are 155 physicians per 100,000 population. Thus, the county does not presently experience a shortage of physicians, at least when measured by this standard.

With respect to attracting physicians into the area, a phenomenon frequently associated with the presence of a medical school, physicians tend to base their site of practice decisions on the location of residency program, location of internship, place of birth, and location of medical school, in that order. Given this, a medical school with limited internship and residency programs may do little to increase the physician population of the surrounding area. There is not, in other words, a direct relationship between the two.

The argument for improved health care quality may be more important in areas where the level of health care is less than average. While it is difficult to place a qualitative value on the level of medical care in a community, Spokane's wide range of medical specialists and facilities suggest that residents enjoy adequate, perhaps above average, health care, again, when

measured by today's standards.

These factors must be further analyzed in terms of the construction and operating costs of a medical school. In a 1967 report, the Association of American Medical Colleges determined that the average cost of a basic science building was $21 million, and that of the teaching hospital was $23.5 million. For schools utilizing existing facilities, average construction cost was $33 million for the combined basic science and teaching hospital facility. These estimates are in terms of 1966 construction costs and should be increased at a rate of 8 percent per year to reflect annual cost increases.

Proponents of a Spokane medical school frequently see the existing concentration of medical facilities as an additional argument for their view, since existing hospitals could serve as teaching facilities. Such utilization could present serious problems. A teaching hospital, preferably owned and certainly operated by the medical school, is a basic requirement, and it is doubtful that any of the three hospitals are willing to relinquish autonomy for this purpose. Moreover, existing hospitals were not designed with the teaching and research needs of a medical school in mind, and none would be entirely adequate as a teaching hospital. In all probability, a medical school in Spokane would ultimately require the construction of its own teaching hospital, and this, again, would represent a major capital cost.

Annual operating costs for a medical school must be also given careful consideration. Both publicly and privately supported medical schools are experiencing difficulty in meeting mounting costs. At the present time, annual medical school operating expenditures average $6 million to $7 million. This would represent a major financial commitment on the part of the State.

Two innovative programs presently in the planning stages should provide numerous additional health care benefits to residents of the Spokane area. These are the Family Practice Residency program and the WAMI program.

The Family Practice Residency program will focus on the training of physicians to perform the general functions usually required of physicians in family practice. It is a program to prepare a physician to specialize in general practice in the same manner as other programs prepare persons to specialize in pediatrics, obstetrics, etc. Hopefully, such a residency program would attract physicians to the rural areas and fill voids created by the diminishing numbers of physicians entering general practice. Tentative program plans call for 18 to 24 physicians per year in the program beginning in 1973 or 1974.

While the Family Practice Residency program aims at the medical school graduate, the WAMI (Washington, Alaska, Montana, and Idaho) program focuses on the creation of additional opportunities for students to obtain a medical education, thereby increasing the

annual output of new doctors. This program was designed to give prospective medical students from the participating states increased opportunities to attend medical schools. Except for Washington, these states do not have medical schools. The program's goal is to increase the number of medical school graduates without the construction of additional facilities.

The first year of medical school (basic sciences) would be taken at any institution in a participating state offering a strong program in the basic sciences. The next two years, with some variation, would be taken at the University of Washington School of Medicine. In the last year of the program, the student would work in a local community. Since the Spokane area possesses the second largest concentration of health care facilities within the four states (Seattle having the largest) it is likely to play a major role in the development of this program.

These two programs, when they become operational, should provide Spokane with many of the benefits otherwise associated with the presence of a medical school. They would provide expanded opportunities for Spokane area residents to attend medical school, and they may further increase the level of health care in the community without incurring the costs of constructing and operating a new medical school.

Demand for graduate education in the allied health sciences centers on nursing education. The Center for Nursing Education already has begun exploratory discussions concerning the establishment of a Master's in Nursing program in Spokane. However, since the undergraduate program is in its early stages, a graduate program in nursing appears premature. The undergraduate program must first become firmly established, with permanent staff and developed course offerings; a graduate nursing degree program could then logically follow in a few years.

Demand for graduate education in other allied health science areas is limited. There are potential needs for graduate programs in Medical Technology, Physical Therapy, and Occupational Therapy; however, since there are relatively few degree holding persons in these professions, graduate programs for them should probably be offered at only one institution. Eastern Washington State College currently offers M.S. and M.Ed. programs in Physical Therapy. Graduate programs in the other two occupational fields are not currently offered in this state.

Demand for Continuing Education

Physicians and allied health personnel also face the problem of remaining current in their respective fields. The Spokane medical community attempts to keep abreast of recent developments in medicine through seminars, guest speakers, and so on, but some attention might be directed to the development of more formalized

course offerings and curricula. In view of the highly technical nature of requirements in the health field, the provision of continuing education for physicians should center on programs developed by the profession.

In regard to the provision of vocational training in the allied health fields, existing educational institutions have been generally responsive to community needs in this area. Spokane Community College has developed and is planning relevant programs, and Eastern Washington State College is developing an institutional role and degree programs emphasizing the allied health fields. Most of these efforts are fledgling or in the planning stages; until their potential for meeting such educational needs in eastern Washington is determined, little more in the way of graduate program needs is anticipated.

ARCHITECTURE

Educational Opportunities

Two Washington institutions offer baccalaureate degrees in architecture: the University of Washington and Washington State University. The University of Washington also grants a master's degree in architecture. Presently none of the institutions of higher education in Spokane is either offering or considering programs leading to bachelor's or master's degrees in architecture.

Employment in Architecture

Resident registered professional architects, approximately

10 of whom hold graduate degrees, number 110 persons; an additional 10 to 20 architects are practicing in the Pullman, Washington area. A current shortage of architects in eastern Washington is not apparent.

For the most part, the future demand for new architects depends almost entirely on the physical growth of this population center. However, Spokane's growth potential for the next decade is slight.

Demand for Graduate Education

The number of architects in Spokane does not appear sufficient to support a graduate level program. Discussions with professionals have indicated that though some are interested in graduate education, particularly some recently entering the profession, there is not a sufficient number who could participate on a full-time basis to justify the development and offering of a graduate program. Architects expressing a need for graduate education believe that such a graduate program could be best offered at WSU, where a strong undergraduate program is currently offered, although it would create difficulties for them by its commuting requirements.

Demand for Continuing Education

Architects place greater emphasis on continuing education than on more formalized graduate education. In Spokane this presently consists of reading specialized journals and attending seminars

presented by trade associations and manufacturers. A more highly developed continuing education program would allow architects to effectively remain abreast of technological developments; this is their primary professional educational concern. Beyond such a program, however, additional graduate education programs for architects in Spokane do not appear necessary at this time.

GOVERNMENT

Education Opportunities

Since governmental agencies in Spokane perform a multitude of functions and require persons with a variety of work experience and educational backgrounds, a number of currently offered undergraduate and graduate programs relate to specific job functions within agencies. Also, a large portion of bachelor degree and advanced degree positions in government employment involve engineering, social welfare, law, or education credentials. Graduate education in each of these four professions is discussed separately in this report, and is not reviewed again in this discussion of graduate educational needs of government employees.

Employment in Government

Public employment in Spokane consists of positions with four governmental echelons: 1) the City; 2) the County; 3) the State and 4) the Federal Government. Combined, these four employ slightly more than 8,000 persons.

City and County of Spokane

The City of Spokane employs 1,650 full-time persons. Approximately 150 positions require a college degree; few job classifications require advanced degrees.

Approximately 750 persons are employed on a full-time basis by the County. An additional 200 persons who are employed by the County receive salaries from other sources, e.g., the federal government. Bachelor degrees are required for 23 job classifications and advanced degrees are required for 15 positions, the majority of which are in engineering, law, planning and probation.

Officials in both the City and County government feel their future manpower requirements will increase slowly and will depend upon available revenues. This, along with the limited growth potential of the Spokane area economy, suggests that local government staffing needs will remain relatively constant during the next decade.

State of Washington

The State operates 33 agencies at 69 locations in Spokane County. These State agencies serve both Spokane and 15 other counties in eastern Washington, and they involve 2,850 employees. Ten to 15 percent of the permanent positions require baccalaureate level degrees. The two largest State agencies in Spokane County are the Bureau of Public Assistance and the Department of Employment

Security.

Manpower requirements of State agencies are tied to the state budget; presently, agencies can fill only 25 percent of new positions and only 50 percent of the positions vacated since October 1969. Agency representatives do not foresee a drastic improvement in available funds for these positions, and some anticipate further reductions in the Spokane area's State work force.

The demand for advanced degrees within these state agencies is limited. With few exceptions, advanced degrees are required primarily in social welfare and engineering. Additional, limited, interest in graduate programs in public or organizational administration, economics, and other business and social sciences may be assumed.

United States Government

The Federal Government presently employs some 3,000 persons in the Spokane area. Approximately one-third of these are employed by the Post Office, another 600 are employed at Fairchild Air Force Base.

The Federal Government also has few positions that require advanced degrees. The Bureau of Mines and the Veterans' Administration Hospital represent the two largest agencies which require graduate degrees. A larger percentage of the positions available on the federal level demand clerical or technical skills.

Representatives from all Federal agencies in Spokane state that their personnel needs during the 1970's will be closely tied to their financial resources. Employment in federal agencies should remain stable during the next five years; since the rate of turnover among federal employees is low, little new hiring will occur.

Demand for Graduate Education

Excluding social welfare, engineering, law and education, demand for graduate studies by public employees in Spokane is slight. Primary interests relate to graduate studies in public administration and city and urban planning. Courses in these disciplines are now offered at the undergraduate level at Eastern Washington State College (public administration is there considered a sub-field of Political Science); no graduate programs are presently offered, though Eastern is currently considering the development of a master's program in public or organizational administration. If its feasibility studies indicate sufficient interest, such a program could take care of most of the graduate needs of public employees there. In view of the large numbers of government employees located nearby, the development of such a feasibility study appears warranted.

Demand for Continuing Education

Public administration also see a need for vocational and continuing education. They feel that this type of instruction

could provide relevant training for large numbers of persons. Several governmental agencies are working with educational institutions on the development of such programs. The City of Spokane, for example, has been working with Spokane Community College on continuing education programs for city employees.

In summary, since government employees reflect the same skills and interests as employees in other sectors, graduate programs relevant to professions in the private sector are also frequently relevant to public employment. An exception may involve Public Administration. Eastern's envisaged Master's in Organizational Administration reflects a concern for a program relating to the administrative problems of both the public and private sectors. A program designed to bridge the gap between these two segments holds much promise.

EDUCATION

Three institutions of higher learning in the Spokane area offer graduate programs in Education. Eastern Washington State College offers a Master of Education degree with specialization in any of 21 areas (see Table 9). Gonzaga University offers a Master of Education, a Master of Education with emphasis in Administration, and a Master of Education with emphasis in Guidance and Counseling. Whitworth College offers a Master of Education with concentration in elementary teaching, counseling

Table 9

AREAS OF SPECIALIZATION
MASTER OF EDUCATION DEGREE
EASTERN WASHINGTON STATE COLLEGE

Area Of Specialization
Business Education
Distribution Education
Curriculum Specialist
Elementary Teaching
Foundations of Education
Guidance and Counseling
Instructional Media
Reading Specialist
School Prinicpal
Supervisory Teaching
English
French*
German*
History
Mathematics
Instructional Field Specialization
Music
Physical Education
Physics
Speech Correction
Spanish*

*Eastern has indicated plans to combine these three programs into one Master of Education in Foreign Languages

Source: Eastern Washington State College

and guidance, and administration. It also offers a Master of Arts in Teaching oriented to secondary and community college teachers.

Employment in Education

Some 4,300 persons are employed by 14 school districts in Spokane County. Among them, 3,100 are in either teaching or administrative positions, the remaining 1,200 are in clerical or maintenance positions. District 81, which closely conforms to the geographical boundaries of the city of Spokane, is the largest single employer of teachers and administrators, with 1,750 teachers and 79 persons in clerical and other non-administrative positions. The number of certified[1] and non-certified[2] personnel for the 1970-1971 school year in intermediate school district 101, which encompasses six area counties, is shown in Table 10.

With the projected stabilization in elementary and secondary school enrollment in the Spokane area, no sizeable increases in the number of administrators and teachers during the 1970's are projected by area school districts. In view of recent budget cuts some staffs may be reduced. Presently, there is a surplus of teachers in the Spokane area.

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[1] Administrators and teachers

[2] Clerical and non-administrative positions

Table 10

NUMBER OF SCHOOL EMPLOYEES
INTERMEDIATE SCHOOL DISTRICT #101

County	Number Of Employees[1/]	
	Certified	Non-Certified
Ferry	53	27
Lincoln	160	74
Spokane	3,098	1,177
Pend Oreille	88	41
Stevens	221	107
Whitman	415	141
Total	4,035	1,567

1/ Full-time equivalents.

Source: Intermediate School District #101.

Demands for Graduate Education

Discussions with educators in the Spokane area reveal that graduate educational needs in Education are adequately served by programs offered at the local institutions. Since administrators and teachers must take graduate level courses for advancement, most enroll in graduate courses at one time or another. The financial incentives for graduate education are normally greater in this field (and in Social Work) than in other professions.

Demand for Continuing Education

Interest in continuing education among teachers appears high. As with graduate education, financial considerations are a motivating factor, since some continuing education courses offer credits which may be used to meet requirements for salary advances. Interest in non-credit courses to keep administrators and teachers apprised of developments in their specialized areas also contributes to the strong demand for continuing education. The consensus among the administrators is that these needs are adequately served within the community, and that Eastern Washington State College and Whitworth College are particularly responsive.

This completes the examination of the eight professional categories selected for study in this report. On the basis of this analysis, it is apparent that most graduate education needs are being adequately served. In some categories, interest is

directed more to continuing education programs than to structured courses of instruction leading to graduate degrees. To the extent that possible needs for some graduate education programs were revealed, these were related to the social work, governmental, and health science categories.

CHAPTER III

CONCLUSIONS

It is evident that Spokane's needs for additional graduate studies are limited. Among the eight categories: law, business, architecture, engineering, social work, government employment, the health professions, and education, the greatest need appears to be in social work, primarily at the intermediate, or Master's level. An additional possible need and interest for a graduate level program in public or organizational administration, also at the intermediate level, is a logical corollary to Spokane's status as the geographical center of government offices in the Inland Empire. In addition, the area's extensive health profession complex suggests a potential for such intermediate level programs in the allied health sciences. In all cases, however, further study, rather than hasty initiation of programs, appears appropriate.

In the remaining professional fields, interest is frequently directed to continuing education programs or procedures for keeping specialist au courant. These are not necessarily graduate program needs and, as such, may be outside the scope of this report. However, consistent references to this type of study suggest that the careful development of appropriate course offerings is in order.

Institutions in the Spokane area presently offer a variety

of graduate programs leading to the Master's degree, or, in the case of Law, to the J.D. degree. In many occupations, the existing programs serve professional needs adequately - the various Master's of Education programs offered at Eastern Washington State College are a case in point. These programs appear to sufficiently meet the graduate studies needs of the Education profession. Requirements for graduate programs beyond the Master's level have not been demonstrated. Education administrators in Spokane mention a need for a PhD in Education at Eastern, but with the presence of such a program at WSU, the initiation of another in eastern Washington does not appear warranted, even though the burden of commuting to Pullman is heavy.

Frequent references to interest in Master's programs in Business Administration, Management, Economics, etc., among engineers and governmental employees, particularly Armed Forces personnel, are noted. At the same time, low participation rates among non-Business professionals in the existing graduate programs suggests that such attitudes are not frequently transformed into action. Before drawing this conclusion, however, the faculty of the departments currently offering such programs might examine their course offerings, degree requirements, and class schedules to determine if the lack of such participation is attributable to problems associated with these matters. If this proves to be the case, modifications

could make these programs more amenable to the graduate education interests of many non-Business professionals.

The eight fields examined are not strictly representative of all professions. The presence of mining and petroleum companies in Spokane, with comparatively large staffs of geologists, chemists, and petroleum engineers may suggest interest in other graduate programs in the natural sciences, and this interest would not have been necessarily revealed by the examination of graduate needs of engineers generally. A comprehensive analysis of all such program demands is beyond the scope of this endeavor. The Council on Higher Education has long-range comprehensive planning responsibilities, and such detailed examination is an appropriate function of those planning responsibilities.

The thrust of this analysis has been directed to manpower needs. An important demand for graduate education is associated with personal desires for intellectual development, and these need not be directly associated with career or vocational betterment. Such needs are not directly assessed in this report. At the same time, a large number of intermediate level graduate programs are currently offered by instituions in the Spokane area, and many of these are relevant to the educational (as distinct from vocational) goals of such persons (e.g., graduate programs in the Arts and Letters, particularly English, Literature, various foreign languages, Fine Arts, and the Social Sciences). Generally, Spokane's greatest

graduate education needs are in the highly technical areas, almost by nature of primary interest to persons who visualize their educational goals in the context of their vocational requirements.

The long-range planning effort should reflect cognizance of both forms of interest as they relate to all levels of graduate education. This would include such matters as the need for additional PhD and post-Master's programs in eastern Washington, and which institutions might most appropriately offer them. Conclusions concerning these subjects are deferred to that endeavor.

Along with the private institutions of higher education, Spokane lies well within the reasonable commuting range of one of the State's major four-year colleges - Eastern Washington State College. Eastern presently offers a number of the intermediate-level programs that serve a large part of Spokane's education needs: as demands for additional studies are demonstrated, Eastern's potential for meeting them should be recognized. Present efforts among officials at that institution to develop new intermediate graduate programs in the allied health sciences reflects an awareness of this situation. Eastern's present status as the only institution in Washington to offer an undergraduate degree in Social Work also seems to suit it well for the offering of a Master's program in this field, should one be initiated.

A major conclusion of this report is that while the demands for additional graduate programs in the Spokane area are limited, the potential for a variety of continuing education programs is real. Among the five institutions of higher learning in the area, the response of Spokane Community College has been the most impressive. The four-year institutions, while recognizing important interests in this area, have not been able to identify a definitive role for themselves in the provision of continuing education programs.

The strong potential of coordinated approaches, through a consortium or another form of inter-institutional alliance, for effectively applying existing educational resources to the resolution of many such problems, should be recognized. In many respects, the Spokane educational complex is similar to that of the Springfield, Massachusetts Metropolitan area. The resemblance is particularly important, for the public and private institutions in the Springfield area have a history of well-developed and successful inter-institutional programs. The University of Massachusetts (Amherst), Mount Holyoke College, Amherst College, Hampshire College and Smith College, through their Council of Presidents, have established a five-college coordinator, with a staff, to facilitate cooperative endeavors. Coordinated activities, involving the exchange of faculty, inter-college seminars, graduate student/faculty meetings, and

inter-institutional graduate degree programs, are extensive. Efforts to avoid duplicate course offerings, largely by encouraging students to enroll for courses in any of the participating institutions, have been successful. Inter-library resource pooling has also achieved important cost savings. Students at any of the five institutions may obtain books and materials at any of the libraries. The University of Massachusetts library maintains the five-college collection of periodicals, thus eliminating duplicate subscriptions. Such programs could be studied and, when applicable, emulated by institutions in the Spokane area.

For the most part, duplicate degree programs among the Spokane institutions are not extensive, but some are in evidence. Effective inter-institutional relationships could achieve a reduction in these. Moreover, graduate programs seem particularly appropriate to such cooperative approaches. As a first step to the examination of such matters, the presidents of the Spokane institutions might establish a council. Subsequent efforts might be directed to the empaneling of inter-institutional committees to examine and formulate recommendations on such subjects as the need for (and ways of) strengthening existing programs, additional programs (particularly in continuing education), non-credit courses at advanced levels, unified fee structures, modifications in off-campus residency requirements, credit hour reciprocity, uniform

registration, and reciprocal attendance and admission procedures. The subjects are endless, and the potential for integrated educational programming (as is demonstrated in the existing nursing program in Spokane) is great.

Spokane can bring education to the people of the community. The facilities are there. The problem is to find ways for bringing the needs of the community and the resources of the institutions together. To this end, and in conclusion, the following recommendations are offered:

1. Work should continue on the determination of a Master's program in Social Work in Spokane. Particular attention should be directed to the feasibility of an inter-institutional program utilizing the Social Work faculty and programs at Eastern (the only undergraduate program in Social Work in Washington) and the resources of Gonzaga, where a graduate degree program in Sociology is offered.

2. Work should begin on the determination of the feasibility of a Master's program in Public or Organizational Administration to accommodate needs emanating from the area's extensive public service employees. As with the program in Social Work, particular attention should be directed to the feasibility of an inter-institutional graduate program.

3. Consideration should be given to the development of additional intermediate graduate programs in the Allied Health

Sciences with particular attention directed to the need for a graduate program in nursing. The consortium nursing program is likely to soon achieve the levels necessary to support a graduate nursing program. Moreover, as this program grows, the need for nursing instructors with advanced degrees will also grow. A graduate nursing program could meet this need. The existing inter-institutional cooperation in the undergraduate nursing program also should be studied in terms of its potential as a model for other programs in the Allied Health Sciences.

4. Existing graduate programs in Business Administration and Business Management should be examined with the object of determining their potential for meeting the graduate education interests of non-Business professionals. If this potential is real, attention should be directed to modifications in scheduling and other requirements to make them more amenable to the time limitations of such persons.

5. The current emphasis on innovative programs in medical education is timely. The promise of the WAMI program and the Family Practice Residency Program, as means to solving many of the problems stemming from the lack of a regional medical education center, is great. While the need for a medical education center in Spokane has been neither substantiated nor dispatched by this report, further study should await the development of these two programs.

6. The needs for additional graduate education programs in Spokane are limited, but needs for continuing education programs in a variety of areas is indicated. Spokane Community College has been responding effectively to these needs, primarily as they relate to the lower division levels; a role for the four-year institutions at the more advanced levels is apparent, and concern should be directed to the identification of the types of programs needed and to innovative and integrated approaches to meeting these needs.

7. The presence of five public and private institutions in the immediate Spokane area may be analogous to the educational institution complex in the Springfield, Massachusetts area. Private and public institutions in that area are increasingly pooling resources to meet the educational needs of western Massachusetts. The potential for similar combined approaches to higher education in eastern Washington is real, and the presidents and faculty of the Spokane area institutions should consider them carefully. As a first step, the presidents might consider the formation of a president's council to examine the success of the program in Massachusetts; subsequent steps would entail the establishment of inter-institutional committees to examine and recommend the development of specific programs.

Appendix A

INVENTORY OF DEGREES OFFERED
AND ENROLLMENT BY DEGREE:
SPOKANE PRIVATE INSTITUTIONS

DEGREE INVENTORY AND ENROLLMENT
FORT WRIGHT COLLEGE

School	Major	Degree	Enrollment 3/
Division Of Fine Arts	Art	BA 1/	40
	Music	BA	11
	Speech and Drama	BA	18
	Fine Arts	Master of Fine Arts	8
Division Of Literature And Languages	English	BA	28
	Modern Languages (French, Spanish & German)	BA	24
Division Of Religion And Philosophy	Humanities	BA	12
	Religion	GA	--
	Religious Education	Master of Religious Education	--
Division Of Science And Mathematics	Medical Technology	BS 2/	3
	Nursing	BS	11
	Biology	BA, BS	9
	Mathematics	BA	5
Division Of Social Sciences	History	BA	11
	Home Economics	BA	15
	Sociology	BA	11
Undecided			24
Total			230

1/ BA - Bachelor of Arts degree.
2/ BS - Bachelor of Science degree.
3/ Enrollment - second semester 1970-1971 school year.

Source: Fort Wright College.

DEGREE INVENTORY AND ENROLLMENT
GONZAGA UNIVERSITY
UNDERGRADUATE DIVISION[1]

School	Major	Degree	Enrollment By Class			
			Freshman	Sophomore	Junior	Senior
College Of Arts And Sciences	Art	BA[2]	10	9	7	6
	Classical Civilization	BA	--	--	--	--
	Classics	BA	--	--	--	1
	Communication	BA	3	8	8	3
	Economics	BA	--	--	--	--
	English	BA	24	29	52	36
	French	BA	5	7	4	2
	German	BA	--	--	--	--
	Greek	BA	--	--	--	--
	History	BA	14	20	16	21
	Italian Studies	BA	--	--	--	2
	Latin	BA	--	1	--	2
	Music	BA	--	3	--	1
	Philosophy	BA	4	14	12	28
	Political Science	BA	24	26	40	21
	Psychology	BA	18	30	46	23
	Sociology	BA	20	22	24	9
	Spanish	BA	2	7	4	2
	Speech and Drama	BA	6	9	19	10
	Theology	BA	2	2	7	3
	Basic Medical Sciences	BS[3]	--	--	--	--
	Biology	BS	26	23	26	22
	Chemistry	BS	10	9	14	6

School	Major	Degree	Enrollment By Class			
			Freshman	Sophomore	Junior	Senior
College Of Arts And Sciences (continued)	Mathematics	BS[3/]	12	15	12	11
	Medical Technology	BS	15	15	10	2
	Physics	BS	6	--	--	2
	Undecided Arts and Science	--	304	151	10	6
School Of Business Administration	Accounting	BA	11	19	22	21
	Economics	BA	--	--	--	--
	Finance	BA	5	6	5	10
	Marketing	BA	4	6	17	15
	Personnel and Industrial Relations	BA	3	3	16	10
	Undecided	--	38	36	28	8
School Of Education	Education	BA	--	3	1	2
	Music Education	BA	--	--	--	--
School Of Engineering	Civil	BS	10	5	5	6
	Electrical	BS	17	9	10	9
	Engineering Science	BS	8	8	2	1
	Mechanical	BS	10	5	7	5
	Undecided	--	27	15	4	1
Total			638	515	429	307

1/ Full-time enrollment - Fall 1970-1971.
2/ BA - Bachelor of Arts degree.
3/ BS - Bachelor of Science degree.

Source: Gonzaga University.

DEGREE INVENTORY AND ENROLLMENT
GONZAGA UNIVERSITY
GRADUATE DIVISION

Major	Degree	Enrollment 1/ Full-Time	Part-Time
Business Administration	MBA	20	43
Classical Languages	MA	--	--
Economics	MA	--	--
Counseling And Guidance	MA	8	6
Administration And Curriculum	MA	--	--
Counseling And Guidance	MEd	11	10
Administration And Curriculum	MEd	--	1
English	MA	2	4
History	MA	--	1
Mathematics	MA	--	--
Mathematics	MS	--	2
Philosophy	MA	3	--
Sociology	MA	--	--
Theology	MA	--	--
Certificate Of Advanced Graduate Study Art	--	2	--
Total		46	67

1/ Second semester - 1970-1971 school year.

Source: Gonzaga University.

DEGREE INVENTORY AND ENROLLMENT
WHITWORTH COLLEGE
UNDERGRADUATE DIVISION [1]

School	Major	Degree	Enrollment
Humanities	Art	BA	35
	English	BA	67
	Greek	BA	--
	Library Science	BA	--
	Modern Languages	BA	21
	Music	BA	47
	Philosophy	BA	5
	Religion	BA	--
	Speech and Drama	BA	21
Natural Sciences	Biology	BS	22
	Chemistry	BS	11
	Geology	BS	8
	Home Economics	BA	63
	Mathematics	BA	15
	Physical Education	BA	54
	Physics and Engineering	BS	5
	Nursing	BA	32
Social Sciences	Business and Economics	BA	49
	Business Education	BA	10
	History	BA	15
	Journalism	BA	17
	Political Science	BA	19
	Psychology	BA	36
	Sociology	BA	38
	Social Science	BA	27
Undecided			319
Total			936

DEGREE INVENTORY AND ENROLLMENT
WHITWORTH COLLEGE
GRADUATE DIVISION

Major	Degree	Enrollment[2/]
Education		
Elementary Teaching	MEd[3/]	141
Counseling And Guidance	MEd	71
Administration	MEd	32
Teaching-Secondary And Community College Level	MAT[4/]	106
Total		350

1/ Fall enrollment 1970.
2/ Includes both full-time and part-time enrollment.
3/ MEd Masters of Education.
4/ MAT Masters of Arts in Teaching.

Source: Whitworth College.

Appendix B

INDIVIDUALS, PUBLIC AGENCIES
AND CORPORATIONS CONTACTED

Law

Lawrence R. Small - Attorney
Eldon Reiley - Attorney
Dean Lewis Orland - Dean of the Gonzaga School of Law

Engineering

Jim Latenser
Mr. Sanders - Bovay Engineers
Mr. Turner - County of Spokane
Ken Norrie
Mr. Marque - Marque, Clerc & Riley
Earl Cowley - State Conservation Board - State of Washington
Mr. McBride - State Department of Highways
Mr. McPhaden - Kaiser Aluminum
Glen Yake - City of Spokane
Dean McGivern - School of Engineering Gonzaga University
Mr. Esvalt - Esvalt & Saxon
Galen Waddell - Bureau of Mines
Washington Water and Power

Business

Individuals:

George Reitemier - Spokane Chamber of Commerce
Jack Griffiths - Spokane Chamber of Commerce
Morris Slavens - Department of Employment Security - State of Washington
Robert Robinson - Department of Employment Security - State of Washington
William Cowles III - Spokesman Review
King Cole - Spokane Unlimited
Claire Jones - Harvey's Men Wear
Jerry White - Inland Freight Association
Richard Leahy - Ryenson Steel Co.

Business (continued)

Business Firms:

Carnation Company
American Sign and Indicator Company
Cominco American Inc.
Washington Water and Power
IBM
Cover d'Nenes Company
Burlington Northern Railway
Standard Oil Company of California
Armour & Co.
Bower Machinery Co., Inc.
Clark Equipment Company
Anderson-Miller Manufacturing Company
ASC Industries
Darigold
B. J. Carney & Co.
John W. Graham Co.
General Machinery Co.
Fiberform
Hygrade Food Products Company
ITT Continental Baking Co.
Jensen Byrd Co.
Pacific Trail Sportswear
R. A. Pearson Co.
Roundup Co.
Sylvania-Columbia Lighting, Inc.
URM Stones, Inc.
Coronet Enterprises
Inland Empire Paper Co.
Comet Corporation
Columbia Electric Company
Pend Oreilley Mines and Metal Co.
Garrett Freightlines, Inc.
Pacific Northwest Bell

Business (continued)

Financial Institutions:

Federal Land Bank
Fidelity Mutual Savings Bank
Seattle First National Bank
Washington Trust Bank
First National Bank of Spokane
Lincoln Savings
Old National Bank

Social Welfare

Fred Hanneman - University of Washington School of Social Work
Spokane Program
Jane Hansen - Lakeland Village
Bob Stimson - Personnel Director - State Department of Public Assistance
Vern Olmstead - United Crusade
Vic Guthrie - Eastern Washington State Hospital
Robert Goodwin - Lakeland Village

Health Sciences

Dr. John Sonneland
Dr. John Moyer - President - Spokane County Medical Association
Dr. Roy Pearson
Dr. William Yakely
Betty Harrington - Coordinator of Educational Programs, Sacred Heart Hospital
Mrs. Hilda Roberts - Director - Center for Nursing Education
John Colby - Administrator - St. Lukes Hospital
Jerry Leahy - Assistant Administrator - Sacred Heart Hospital
Sister Mathis - Assistant Administrator - Holy Family Hospital
Mrs. Green - President - Spokane County Nurses Association
Henry Rehder - Chief of Nursing - Deaconess Hospital
Dr. Harter - Executive Coordinator of Health Sciences - Eastern Washington State Hospital
Alvin Davidson - Dean of Applied Arts - Spokane Community College
Harry Wheeler - Administrator - Deaconess Hospital

Architecture

William Trogdon - Architect

Government

James Laurilla - Civil Service Representative - U. S. Federal Government
Mr. McFarland - Representative - State of Washington
Gary Persinger - Personnel Director - City of Spokane
Walter Hedger - Personnel Director - County of Spokane

Education

Emerson Shuck - President - Eastern Washington State College
Raymond Whitfield - Dean - Eastern Washington State College
John Fahey - Research Coordinator - Eastern Washington State College
Dave Manson - Registrar - Eastern Washington State College
Wallis Beasley - Executive Vice President - Washington State University
Allan Smith - Vice President - Washington State University
Reginald Miller - Director of Relations - Washington State University
David Winter - Dean - Whitworth College
Alvin Quall - Dean - Whitworth College
Roland Wunster - Registrar - Whitworth College
Walter Johnsón - President - Spokane Community College
Max Schneider - President - Spokane Falls Community College
Richard Twohy - President - Gonzaga University
John Barnes - Dean - Gonzaga University
McGivern - Dean - Gonzaga University
Lewis Orland - Dean - Gonzaga University
Craig Savage - Registrar - Gonzaga University
Sister Monica Schmidt - President - Fort Wright College
Sister Katherine Gray - Vice President - Academic Affairs Fort Wright College
Dr. Albert Ayars - Superintendent - District #81
Van Emerson - Intermediate - District #101
Dr. George Daniels - Superintendent - Central Valley School District
Dr. Cecil Johnson - School District #81

Appendix C

MEDICAL SCHOOL CONSTRUCTION COSTS

CAPITAL CONSTRUCTION COSTS FOR DEVELOPING MEDICAL SCHOOLS

Making Little Use of Existing Facilities

Number Of Students	Total Cost (thousands)	Cost Of Basic Science Building (thousands)	Gross Square Feet (thousands)	Hospital Cost (thousands)	Gross Square Feet (thousands)	Number Of Beds
64	--	$20,400	373	--	--	--
64	$60,410	37,810[1]	640	$26,600[2]	471	400
64	24,941	9,941	174	15,000[2]	386	300
64	41,661	19,574	411	22,114[2]	427	350
64	30,925	7,425	200	23,500[2]	540	300
96	36,000	15,000	311	21,000[2]	350	350
100	27,500	12,000	432	15,500[2]	465	516
100	77,723	44,723[3]	697	33,000	544	400
100	56,232	21,469[2]	287	34,763	551	400
128	44,150	22,150[2]	385	22,000	400	350
150	--	--	528	--	500	600
Average 90.4	$44,393	$21,046	403	$23,490	463	396

1/ Dental school (64-man class) included.
2/ Planned or projected.
3/ Major graduate school.

Source: Association of American Medical Colleges, The Journal of Medical Education, "Developing Medical Schools: An Interim Report," November 1967.

CAPITAL CONSTRUCTION COSTS FOR DEVELOPING MEDICAL SCHOOLS
Utilizing Existing Facilities

Number Of Students	Total Cost (thousands)	Cost Of Basic Science Building (thousands)	Gross Square Feet (thousands)	Hospital Cost (thousands)	Gross Square Feet (thousands)	Number Of Beds
48	$11,930	$ 5,930	172	$ 6,000	135	100
50	--	8,505	159	--	--	--
50	--	6,836	142	--	--	--
100	63,000[1]/	41,000	--	22,000[1]/	--	--
100	23,000[1]/	9,300	170	13,000[1]/	250	--
Average 69	$32,900	$14,314	160	$14,000	192	--

1/ Planned or projected.

Sources: Association of American Medical Colleges, The Journal of Medical Education, "Developing Medical Schools: An Interim Report," November 1967.